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Device and Procedure for Portioning a Piece of Food

Claims

1. Device for the portioning of a piece of food into portions with a predetermined weight or a predetermined thickness
with at least one oblong insertion chamber (4) for the insertion of the piece of food,
with a piston (8) that can be inserted axially from one end into the insertion chamber (4) for the compression of the piece of food in the insertion chamber and for the gradual or continuous axial infeed,
with a knife (3) arranged in a movable manner on the insertion chamber (4) for cutting the portion protruding from the insertion chamber from the piece of food,
characterized in that
an insertion drum arranged in such a manner that it can be rotated around its axis (5) is provided and in that the insertion chamber (4) or several insertion chambers (4) are part of the insertion drum (1).

2. Portioning device in accordance with claim 1, characterized in that several insertion chambers (4), which run parallel to each other and to the axis (5) of the insertion drum or at an angle to each other and to the axis of the insertion drum, are provided in the insertion drum (1).

3. Device in accordance with claim 1, characterized in that the end of the insertion chamber (4) turned away from the piston (8) is provided with a portioning drum (2) arranged in a rotatable manner around its axis (11) that contains one or more portioning chambers (10) and
in that the knife (2) for cutting the portion located in the portioning chamber (10) from the piece of food is provided between the insertion drum (1) and the portioning drum (2).

4. Portioning device in accordance with claim 3, characterized in that the axis (11) of the portioning drum (2) runs coaxial, parallel or at an angle to the axis (5) of the insertion drum (1).

5. Portioning device in accordance with claim 3 or 4, characterized in that the portioning chamber (10) has a chamber floor (17) arranged in a movable manner on the side turned away from the insertion drum (1) and in that a first mechanical gear unit or a first electromotor, pneumatic or hydraulic power unit is provided for the setting of the chamber floor (17).

6. Portioning device in accordance with claim 5, characterized in that a curve profile (20), an adjusting screw (21) touching the curve profile, and a track roller (19) transferring the movement of the curve profile to the chamber floor are provided for the manual or automatic setting of the position of the chamber floor (17).

7. Portioning device in accordance with claim 5 or 6, characterized in that a second mechanical gear unit or a second electromotor, pneumatic or hydraulic power unit is provided that moves the chamber floor in the first direction turned away from the knife after the completion of the cutting procedure, in order to release the knife.

8. Portioning device in accordance with claim 7, characterized in that the second gear unit or the second power unit is provided in order to move the moveable chamber floor of the portioning chamber in the opposite second direction and to eject the portion from the

portioning chamber.

9. Portioning device in accordance with claim 7 or 8, characterized in that the second gear unit or the second power unit is part of the first gear unit or the first power unit.

10. Portioning device in accordance with one of claims 3 through 9, characterized in that the channels for supplying and removing air are provided in the chamber floor (17) of the portioning chambers (10) and in that the portioning drum (2) is equipped with a media supply tub (22) into which the channels flow.

11. Portioning device in accordance with one of claims 3 through 10, characterized in that a rotation drive is provided for both the portioning drum and the knife.

12. Portioning device in accordance with one of the previous claims, characterized in that a feed (7) and a power unit (9) are provided on the side of the insertion drum (1) for the movement of the piston (8).

13. Portioning device in accordance with one of the previous claims, characterized in that the knife (3) is arranged in a rotatable manner around an axis on the insertion drum or between the insertion drum (1) and the portioning drum (2), whereby the axis runs parallel or coaxial to the axis (5) of the insertion drum (1).

14. Portioning device in accordance with one of the previous claims, characterized in that the knife (3) has a cutting edge (12) with a curved gradient.

15. Portioning device in accordance with claim 13 or 14, characterized in that the knife (3) is disc-like and has the form of a section of a circle, whereby the central angle is between 200° and 300°.

16. Portioning device in accordance with one of claims 1 through 12, characterized in that a power unit is provided for the knife that pushes and retracts the knife in a direction and in that the knife has a cutting edge that runs at an angle against the knife's direction of motion.

17. Portioning device in accordance with one of claims 3 through 15, characterized in that the knife (3) in a first position releases a portioning chamber (10) of the portioning drum (2) in order to press the piece of food over the piston (8) and into the portioning chamber (8) and in that the knife (3) locks the insertion chamber (4) in a second position after the cutting of the portion located in the portioning chamber (10).

18. Portioning device in accordance with one of the previous claims, characterized in that a knife gate is provided on or in the insertion chamber for the cutting of cubes.

19. Process for the portioning of a piece of food into portions with a predetermined weight or a predetermined thickness, in particular under the use of a device in accordance with claim 5, 6, 7, 8, or 9, characterized through the following process steps
in that the piece of food is compressed in an insertion chamber (4),
in that the piece of food is conveyed over a piston (8) into a portioning chamber (10),
in that the portion of food located in the portioning chamber (10) is cut from the remaining piece of food by a knife (3), whereby the knife (3) locks the portioning chamber (10) in the direction of the insertion chamber (4) after the completion of the cutting procedure,
in that a moveable chamber floor (17) of the portioning chamber (10) is moved in the first direction away from the knife (3) in order release the knife,

in that the portioning chamber (10) is moved away from the insertion chamber (4), and

in that the portion is carried out of the portioning chamber (10).

20. Process in accordance with claim 16, characterized in that the movable chamber floor (17) of the portioning chamber (10) is moved in the opposite second direction in order to eject the portion from the portioning chamber (10).